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SEP 05 2007

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1 (currently amended). A safety dialysis needle/catheter system comprising:

a housing;

a catheter portion fixedly attached to the distal end of said housing and capable of securely transmitting fluids, wherein said catheter comprises a shape memory material having a first configuration for penetration and a second configuration acquired after penetration due to exposure to a tissue environment, wherein said second configuration is selected from the group consisting of: a bolous; helical spiral; pig tail; tennis racquet; halo; mushroom; and sinusoidal wave;

a needle disposed within and manually deployable from the catheter; ~~and~~

a spring positioned within the housing, having a first end connected to said housing and a second end connected to the proximal end of the needle; and

a button for manually controlling the position of the needle relative to the catheter, comprising:

a lock within the housing; and

a stop positioned and moveable within the lock and further affixed to the needle, such that positioning of the stop distally within the lock deploys the needle outside the housing, thus biasing the spring towards the proximal end of the housing, so that when the needle is moved proximally with the stop, the spring bias will cause the needle to be retracted into and held within the catheter;

~~a safety feature for preventing an inadvertent needle stick,~~ wherein the safety feature for preventing an inadvertent needle stick comprises the spring, button, lock, and stop ~~consists essentially of a manual retraction means~~ that controls the position and movement of the needle and [[a]]the catheter which forms a needle guard ~~formed by the catheter~~ when the needle is retracted therein.

2 (original). The safety dialysis needle/catheter system according to claim 1, wherein the shape memory material is a shape memory polymer.

3 (original). The safety dialysis needle/catheter system according to claim 1, wherein the shape memory material is a shape memory alloy.

4 (previously presented). The safety dialysis needle/catheter system according to claim 1, wherein the catheter portion further comprises several openings located around and along the catheter portion to allow for maximum blood flow and to minimize sheer stress.

5-8 (canceled).

9 (original). The safety dialysis/catheter system according to claim 1, wherein the shape memory material has a shape recovery condition based on temperature.

10 (original). The safety dialysis needle/catheter system according to claim 9, wherein the shape recovery temperature ranges from about 20°C to about 70°C.

11 (previously presented). The safety dialysis needle/catheter system according to claim 9, wherein the shape recovery temperature ranges from about 30°C to about 50°C, such that the catheter portion is able to be reduced in size or deformed in shape to facilitate catheter portion penetration and closing of catheter incision, prior to introduction into a body; and such that the catheter portion is able to be enlarged in size or reformed in a shape capable of maintaining the position of the catheter within a tissue or cavity after exposure to a temperature within the shape recovery temperature range so that the catheter portion can control and maintain proper fluid flow for dialysis.

12 (original). The safety dialysis needle/catheter system according to claim 1, wherein the shape memory material further comprises at least one therapeutic agent.

13 (original). The safety dialysis needle/catheter system according to claim 12, wherein the therapeutic agent is an anticoagulant or an agent that inhibits the development of bacterium, fungi, viruses, and other infectious agents.

14 (previously presented). The safety dialysis needle/catheter system according to claim 1, wherein a surface of the catheter portion is treated with at least one surface material.

15 (original). The safety dialysis needle/catheter system according to claim 14, wherein the surface material is a hydrophilic coating to increase lubricity and facilitate insertion of the catheter portion.

16 (original). The safety dialysis needle/catheter system according to claim 14, wherein the surface material is a therapeutic agent.

17 (canceled).

18 (original). The safety dialysis needle/catheter system according to claim 1, wherein at least a portion of the catheter portion is transparent for viewing.

19 (original). The safety dialysis needle/catheter system according to claim 18, wherein at least a portion of the catheter portion has visible markers.

20-25 (canceled).

26 (new). The safety dialysis needle/catheter system, according to claim 1, further comprising a button affixed to the stop.

27 (new). The safety dialysis needle/catheter system, according to claim 1, wherein the spring is a concentric coil spring.